

I CLAIM:

1. A fire resistant wood door comprising:
 - an outer peripheral frame; and
 - a two panel wood laminate core including:
 - a first panel formed from an organic material including first and second opposing planar surfaces and a plurality of grooves, said grooves being formed in the first planar surface of the first panel;
 - a second panel formed from an organic material including first and second opposing planar surfaces and a plurality of grooves, said grooves being formed in the first planar surface of the second panel; and
 - a heat barrier layer arranged between the first planar surface of the first panel and the first planar surface of the second panel, said heat barrier layer being formed from a flame resistant casting extending into the plurality of grooves of each of the first and second panels, wherein the first and second panels are pressed together with the heat barrier layer sandwiched therebetween to form the two panel wood laminate core, said two panel wood laminate core being arranged within the outer peripheral frame to form a door having a fire rating of at least 45 minutes.
2. A two panel wood laminate core for a fire resistant door having a fire rating of at least 45 minutes comprising:
 - a first panel formed from an organic material including first and second opposing planar surfaces and a plurality of grooves, said grooves being formed in the first planar surface of the first panel;
 - a second panel formed from an organic material including first and second opposing planar surfaces and a plurality of grooves, said grooves being formed in the first planar surface of the second panel; and

a heat barrier layer arranged between the first planar surface of the first panel and the first planar surface of the second panel, said heat barrier layer being formed from a flame resistant casting extending into the plurality of grooves of each of the first and second panels, wherein the first and second panels are pressed together with the heat barrier layer sandwiched therebetween to form the two panel wood laminate core for use in a door having a fire rating of at least 45 minutes.

3. The wood laminate core according to claim 2, wherein the organic material of each of the first and second panels is constituted by particle board.

4. The wood laminate core according to claim 2, wherein the organic material of each of the first and second panels is selected from the group consisting of: softwood, hardwood, wheat, straw, flax shaves and sugar cane fiber.

5. The wood laminate core according to claim 2, wherein the flame resistant casting is selected from the group consisting of: perlite, gypsum, vermiculite, clay and refractory cement.

6. The wood laminate core according to claim 2, wherein the heat barrier layer includes a binding material.

7. The wood laminate core according to claim 2, wherein the heat barrier layer includes a filler material.

8. The wood laminate core according to claim 7, wherein the filler material is selected from the group consisting of: chopped glass fiber and fiberglass mesh.
9. The wood laminate core according to claim 1, wherein the plurality of grooves extend longitudinally across the first planar surface of each of the first and second panels.
10. The wood laminate core according to claim 9, wherein adjacent ones of the plurality of grooves are separated by approximately 1-4 inches (approximately 25-102 mm).
11. The wood laminate core according to claim 10, wherein adjacent ones of the plurality of grooves are separated by approximately 1.5-3 inches (approximately 38-76 mm).
12. The wood laminate core according to claim 11, wherein adjacent ones of the plurality of grooves are separated by approximately 1.5 inches (approximately 38 mm).
13. The wood laminate core according to claim 2, wherein each of the plurality of grooves has a width and a depth, said depth being approximately 0.25 inches (approximately 6 mm) and said width being approximately 0.125 inches (approximately 3 mm).
14. The wood laminate core according to claim 2, wherein the heat barrier layer is approximately 0.125 inches (approximately 3 mm) thick.

15. The wood laminate core according to claim 2, wherein the core has a density of approximately 25-32 pounds per cubic foot.

16. The wood laminate core according to claim 2, wherein the core has a thickness of approximately 1.5 inches (approximately 38 mm).

17. A method of forming a two panel fire resistant wood door core comprising:

- creating grooves on one side of a first panel formed from an organic material;

- creating grooves on one side of a second panel formed from an organic material;

- coating the one side of at least one of the first and second panels with a casting material to form a heat barrier layer; and

- joining the first and second panels with the heat barrier layer being sandwiched between the first and second panels and extending into the grooves to form a wood laminate core for use in making a dual panel door having a fire rating of at least 45 minutes.

18. The method of claim 17, further comprising: adding a binding material to the casting material prior to coating the one side of the at least one of the first and second panels.

19. The method of claim 17, further comprising: covering the one side of at least one of the first and second panels with a reinforcing material prior to joining the first and second panels.

20. The method of claim 17, wherein joining the first and second panels constitutes cold pressing the first and second panels together to a desired thickness for the laminate core.
21. The method of claim 20, wherein the first and second panels are cold pressed to the desired thickness of approximately 1.5 inches (approximately 38 mm).
22. The method of claim 17, further comprising: trimming the wood laminate core to a desired size.
23. The method of claim 22, further comprising:
mounting the wood laminate core in an outer peripheral frame; and
applying outer sheathing panels to opposite sides of the wood laminate core to form a door having a fire rating of at least 45 minutes.
24. The method of claim 17, wherein the heat barrier layer is sprayed onto the one side surface of each of the first and second panels.
25. The method of claim 17, wherein the heat barrier layer is poured onto the one side surface of each of the first and second panels.
26. The method of claim 17, wherein the heat barrier layer is formed approximately 0.125 inches (approximately 3 mm) thick.
27. The method of claim 17, wherein the grooves are created on one side of each of the first and second panels by directing each of the first and second panels through a rip saw.

28. The method of claim 27, wherein adjacent grooves in each of the first and second panels are spaced by approximately 1-4 inches (approximately 25-102 mm).

29. The method of claim 17, wherein each of the plurality of grooves is formed with a width and a depth, said depth being approximately 0.25 inches (approximately 6 mm) and said width being approximately 0.125 inches (approximately 3 mm).

30. The method of claim 17, further comprising: forming each of the first and second panels from particle board.